University of Adelaide researchers have found that ecstasy taken on a few occasions could cause severe damage to brain cells, with the potential to cause future memory loss or psychological problems.

Dr. Rod Irvine, an internationally regarded ecstasy expert from the University's Department of Clinical and Experimental Pharmacology, says with 7 percent of 17 year olds reporting use of ecstasy, major health problems could be expected in the future.

"For many years it has been known from animal experiments that small doses of ecstasy—even if only taken on only a few occasions—can cause severe damage to certain brain cells," he says. "More recently, evidence has started to accumulate suggesting that this damage may also occur in humans. Brain scans and psychological assessment of ecstasy users has been used to obtain this information.

"If our suspicions are proved correct, it will mean many of our young people will have memory loss or psychological problems in the future."

Dr. Irvine's research on brain damage caused by ecstasy shows that the drug seems to work mainly through its effects on one type of brain cell, and even though one molecule in those cells. It also seems likely that the way the body reacts chemically to ecstasy is important in producing adverse effects, as is the surrounding temperature, which can lead to users overheating.

Adelaide's reputation as having the highest per capita death rate from ecstasy in Australia—and perhaps even the world—forms another component of Dr. Irvine's research.

Dr. Irvine is looking at the shorter-term consequences of ecstasy "overdoses', and has established that the high rate of death is due to a different strain of ecstasy appearing on the Adelaide market in the mid 1990s.

"Normal" ecstasy contains the pharmacological ingredient know as MDMA as its main ingredient, but the Adelaide strain often contained no MDMA but rather a more potent chemical known as PMA.

"PMA hasn't been around since the early 1970s when it was responsible for the deaths of several people I Ontario, Canada, and now it's reappeared here in Adelaide," Dr. Irvine says. "We don't know where the PMA came from, but we do know that it has been prevalent in Adelaide since the mid 1990s."

SOURCE: *University of Adelaide Press Release.*

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